UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,643	06/12/2006	Hironori Ito	10052/8301	1516

26646 7590 08/04/2009

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER	
WILLIAMS, JOSEPH L	

ART UNIT	PAPER NUMBER
2889	

MAIL DATE	DELIVERY MODE
08/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,643	ITO ET AL.	
	Examiner	Art Unit	
	Joseph L. Williams	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 and 19-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (EP 1,378,787) in view of "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" IBM TECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, both of record by Applicant.

Regarding claim 1, Kato ('787) teaches in figure 2 and throughout the text, a transflective display device (10) comprising: a first OLED device (42, 14, 15) comprising a conventional OLED device and characterized as emitting light of a first predetermined bandwidth; and a light modulating element (1) positioned adjacent an emitting surface of the second OLED device. wherein at least one of the OLED devices is fabricated on a light scattering substrate element (11), the light scattering substrate element having at least a roughened surface and wherein the first and second bandwidths are different.

Kato ('787) does not teach a second OLED device comprising a transparent OLED device and characterized as emitting light of a second predetermined bandwidth, the second OLED device positioned adjacent an emitting surface of the first OLED device.

Further regarding claim 1, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" teaches a second OLED device comprising a transparent OLED device and characterized as emitting light of a second predetermined bandwidth, the second OLED device positioned adjacent an emitting surface of the first OLED device for the purpose of providing a full color light emitting display.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multiple OLED's of ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" in the display of Kato for the purpose of providing a full color light emitting display.

Regarding claim 2, the limitation of the first and second bandwidths are emitted in combination with one another in timed sequence appears to be directed towards a method of operating and is thus not germane to the final structure. Therefore, the limitation has not been afforded patentable weight.

Regarding claim 3, Kato ('787) teaches the first OLED device is fabricated on the roughened surface of the light scattering substrate element, the first OLED device having a reflective electrode positioned such that light reflected from a reflective surface of the reflective electrode is transmitted through the emitting surface of second OLED device.

Regarding claim 4, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" teaches a third OLED device comprising a transparent OLED device characterized as emitting light in a third predetermined bandwidth, the third OLED device positioned between the emitting surface of the first OLED device and the second OLED device. The limitation of the first, second and third bandwidths are emitted in combination with one another in timed sequence appears to be directed towards a method of operating and is thus not germane to the final structure. Therefore, the limitation has not been afforded patentable weight.

Regarding claim 5, it is well known in the art to encapsulate an organic EL display for the purpose of protecting the display from air and moisture.

Regarding claim 6, Kato (‘787) teaches the light modulating element is a liquid crystal display.

Regarding claim 7, it is well known in the art to encapsulate an organic EL display for the purpose of protecting the display from air and moisture.

Regarding claim 19, similar to claim 1 above, Kato ('787) teaches all of the claimed limitations except for a third electrode comprising a third electrode comprising a layer of reflective material disposed over the second electrode.

Further regarding claim 19, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" teaches a multilayered color OLED comprised of, in part, a third electrode comprising a third electrode comprising a layer of reflective material disposed over the second electrode, for the purpose of providing a full color light emitting display.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multiple OLED's of ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" in the display of Kato for the purpose of providing a full color light emitting display.

Regarding claim 20, Kato (‘787) teaches a predetermined surface roughness enhances light out coupling of light emitted from the emissive material in the direction of the light modulating element.

Regarding claim 21, Kato (‘787) teaches the surface having the predetermined surface roughness faces the third electrode (the third electrode being taught by "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY").

Regarding claim 22, Kato (‘787) teaches the electrodes have a reflective surface with a surface roughness profile corresponding to the predetermined surface roughness.

Regarding claim 23, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches a second organic layer comprising an emissive material, wherein tile first organic layer is disposed between the first electrode and the second electrode and the second organic layer is disposed between the second electrode and the third electrode.

The reason for combining is the same as for claim 19 above.

Regarding claim 24, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the first and second organic layers emit light of a wavelength different from one another.

The reason for combining is the same as for claim 19 above.

Regarding claim 25, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches a fourth electrode disposed between tile second organic layer and the third electrode, the fourth electrode comprising a layer of transmissive material.

The reason for combining is the same as for claim 19 above.

Regarding claim 26, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches a third organic layer comprising an emissive material disposed between the fourth electrode and tile third electrode.

The reason for combining is the same as for claim 19 above.

Regarding claim 27, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the first, second and third organic layers each emit a different wavelength of light from one another.

The reason for combining is the same as for claim 19 above.

Regarding claim 28, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the different wavelengths are predetermined first, second and third wavelengths capable of producing full color when emitted in combination with one another.

The reason for combining is the same as for claim 19 above.

Regarding claim 29, the limitation of the first, second and third wavelengths are emitted in combination with one another in timed sequence appears to be directed towards a method of operating and is thus not germane to the final structure. Therefore, the limitation has not been afforded patentable weight.

Regarding claim 30, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the first, second and third predetermined wavelengths are blue, green and red respectively.

The reason for combining is the same as for claim 19 above.

Regarding claims 33 and 34, the distance between the reflective electrode and the light modulating layer appears to be an obvious choice in design based upon the overall thickness of the display.

Regarding claim 35, and similar to claim 1 above, Kato (‘787) teaches all of the claimed limitations except for a third electrode disposed over the second electrode, the third electrode comprising a transmissive material; a second organic layer including an emissive material disposed between the second electrode and the third electrode.

Further regarding claim 35, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches a third electrode disposed over the second electrode, the third electrode comprising a transmissive material; a second organic layer including an emissive material disposed between the second electrode and the third electrode, for the purpose of providing a full color light emitting display.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multiple OLED's of ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" in the display of Kato for the purpose of providing a full color light emitting display.

Regarding claim 36, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the first organic layer comprises a first emissive material capable of emitting a first spectra of light; and the second organic layer comprises a second emissive material capable of emitting a second spectra of light different from the first.

The reason for combining is the same as for claim 35 above.

Regarding claim 37, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches a fourth electrode disposed over the third electrode, the fourth electrode comprising a transmissive material and a third organic layer including a third emissive material disposed between the third electrode and the fourth electrode; wherein the third emissive material is capable of emitting a third spectra of light different from the first and the second spectra of light.

The reason for combining is the same as for claim 35 above.

Regarding claim 38, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the first emissive material is included in a first organic light emitting diode, the second emissive material is included in a second organic light emitting diode, and the third emissive material is included in a third organic light emitting diode wherein said first, second and third organic light emitting diodes comprise separate OLED devices.

The reason for combining is the same as for claim 35 above.

Regarding claim 39, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the first, second and third emissive materials are included in a single OLED device.

The reason for combining is the same as for claim 35 above.

Regarding claim 40, "ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY") teaches the single OLED device comprises a stacked light emitting diode.

The reason for combining is the same as for claim 35 above.

Regarding claim 41, it is well known in the art to encapsulate an organic EL display for the purpose of protecting the display from air and moisture.

Regarding claim 42, it is well known in the art to encapsulate an organic EL display for the purpose of protecting the display from air and moisture.

Regarding claim 43, it is well known in the art to encapsulate an organic EL display for the purpose of protecting the display from air and moisture.

Claims 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (EP 1,378,787) in view of Parthasarathy et al. (US 6,420,031), both of record by Applicant.

Regarding claim 8, Kato ('787) teaches in figure 2 and the corresponding text, 8. a transflective display device comprising a light modulating element positioned adjacent to an emitting surface of an OLED backlight, said OLED backlight comprising: a first OLED fabricated on a light scattering substrate element, the light scattering substrate element having at least one surface with a predetermined surface roughness, the first OLED comprising a first conductive layer disposed over the light scattering substrate

element; a first organic layer disposed over the first conductive layer, the first organic layer comprising an emissive material that emits light in a first bandwidth; a second conductive layer disposed over the organic layer wherein one of the first and second conductive layers is a reflective layer and the other is a transmissive layer.

Kato (‘787) does not teach a second OLED positioned adjacent an emitting surface of the first OLED, the second OLED comprising a third conductive layer; a second organic layer disposed over the third conductive layer, the second organic layer comprising an emissive material that emits light in a second bandwidth different from the first bandwidth; a fourth conductive layer disposed over the organic layer wherein the third conductive layer and tile fourth conductive layer comprise transmissive layers.

Further regarding claim 8, Parthasarathy ('031) teaches a multiple OLED device comprised of, in part, a second OLED positioned adjacent an emitting surface of the first OLED, the second OLED comprising a third conductive layer; a second organic layer disposed over the third conductive layer, the second organic layer comprising an emissive material that emits light in a second bandwidth different from the first bandwidth; a fourth conductive layer disposed over the organic layer wherein the third conductive layer and tile fourth conductive layer comprise transmissive layers for the purpose of providing a full color light emitting display.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multiple OLED's of ELECTRO-LUMINESCENT BACKLIGHT FOR COLOR DISPLAY" in the display of Kato for the purpose of providing a full color light emitting display.

Regarding claim 9, the limitation of the first and second bandwidths are emitted in combination with one another in timed sequence appears to be directed towards a method of operating and is thus not germane to the final structure. Therefore, the limitation has not been afforded patentable weight.

Regarding claim 10, Parthasarathy ('031) teaches a third OLED positioned adjacent an emitting surface of the second OLED, the third OLED comprising a fifth conductive layer a third organic layer disposed over the fifth conductive layer, the third organic layer comprising an emissive material that emits light in a third bandwidth different from the first and the second bandwidths; and, a sixth conductive layer disposed over the third organic layer wherein the fifth conductive layer and the sixth conductive layer comprise transmissive layers.

The reason for combining is the same as for claim 8 above.

Regarding claim 11, the limitation of the first, second, and third bandwidths are emitted in combination with one another in timed sequence appears to be directed towards a method of operating and is thus not germane to the final structure. Therefore, the limitation has not been afforded patentable weight.

Regarding claim 12, Parthasarathy ('031) teaches the first, second and third bandwidths are red, green and blue respectively.

The reason for combining is the same as for claim 8 above.

Regarding claim 14, Parthasarathy ('031) teaches at least one of the transmissive conductive layers comprises indium tin oxide (ITO).

The reason for combining is the same as for claim 8 above.

Regarding claim 13, it is well known in the art to encapsulate an organic EL display for the purpose of protecting the display from air and moisture.

Regarding claim 15, Parthasarathy ('031) teaches the at least one of the transmissive conductive layers comprises a magnesium (Mg) material and a lithium silver (Li--Ag) material.

The reason for combining is the same as for claim 8 above.

Regarding claim 16, Kato (‘787) teaches the reflective conductive layer comprises an opaque metal electrode layer.

Regarding claim 17, the claimed roughness appears to be an optimization and thus an obvious choice in design.

Regarding claim 18, Kato (‘787) teaches the first OLED is deposited on the surface of the light scattering substrate element that has the predetermined surface roughness.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (571) 272-2465. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph L. Williams/
Primary Examiner, Art Unit 2889